APPENDIX 10

AIS Documentation - General

The level and type of documentation needed for Automated Information System (AIS) implementation and support will vary based on the *class* of system, specifically mandated requirements (e.g., DoD, DA, etc.), and the unique needs of the AIS itself and its operating environment. This appendix provides an overview of the documentation generally applicable to each phase of the systems life cycle, with information and guidelines on each product. For AIS implemented under LCMIS regulations, documentation requirements are expected to be fairly explicit based on the application of current regulations and standards on the process. However, **the emerging DoD guidance on information systems documentation permits a considerable degree of "tailoring" to match the scope of required documents with the size and complexity of the AIS**. This approach provides the flexibility to economize where appropriate and only generate the volume and type of documentation that is actually needed for a given application.

Documentation Standards

The *technical* documentation requirements stipulated in this appendix are primarily based on the new MIL-STD-498, Military Standard-Software Development and Documentation, 5 December 1994. This document is a consolidation and major update of requirements derived from three existing standards previously used within DoD for managing software development and associated documentation -- DoD-STD-2167A, DoD-STD-7935A, and DoD-STD-1703(NS). The new standard reorganizes and aligns software development activities closer to current life cycle management activities in accordance with DoD Directive 8120.1 and DoD Instruction 8120.2. This upgrade includes recognition and support for:

- Incremental and Evolutionary development models.
- Increased compatibility with object-oriented development models.
- Increased compatibility with CASE tools.
- Greater flexibility in document preparation.
- Employment of reusable software.
- Long-term software supportability.
- Improved links to systems engineering.

The standard was created to establish "uniform requirements for software development and documentation" in the Department of Defense. It is intended to be applied to contractors, subcontractors, or Government in-house agencies performing software development.

This rather significant revision is an attempt to change the outdated, excessive approach to documenting information systems, previously based on the highly structured "waterfall" program strategy methodology, that has long been the standard within DoD. This new standard, although still very explicit in many areas, acknowledges current system technologies and software engineering methods in providing a more flexible, cost-effective approach to documenting systems.

Even with enhanced capabilities, such as CASE tools and desktop publishing, to support the process, generation **and** maintenance of systems/software documentation can be a very expensive element of the AIS life cycle. The AIS project management and staff should carefully examine the actual documentation needs of the project and **tailor**, within the bounds permitted by the regulations and guidelines, the products

accordingly -- *don't generate any more paperwork than you need to operate and support the AIS!*

Documentation - Tailoring Concept

This idea of "tailoring" is intended to establish a means of creating, in a logical and timely manner, documentation for an AIS that *concurrently* satisfies the following objectives:

- Fully describes the AIS at a level that meets the critical information needs of functional users for AIS operation, *including* training support.
- Provides sufficient detail so that agencies charged with maintaining and enhancing the AIS can perform these tasks, using the documentation for system reference.
- Is structured in such a way that evolving changes in AIS requirements and design can be readily and fully reflected in the system documentation as the end product changes (i.e., accurately maintained).
- Adheres to a generally consistent method of defining and describing an AIS and its operating environment that can be applied, in some uniform approach, to every AIS being implemented.
- Doesn't overwhelm the ability of a potentially small AIS support staff to reasonably store and maintain the system

documentation as part of their project support responsibility.

Even the new DoD standard states that "This standard and its Data Item Descriptions (DIDs) are *meant* to be tailored for each type of software to which they are applied." The tailoring guidance further states that, for each application (AIS), the standard "should be tailored to the specific requirements of a particular program, program phase, or contractual structure . . . [and should] eliminate tasks that add unnecessary costs and data that do not add value to the process or the product." The key to tailoring is to reasonably determine which documentation requirements can be deleted or reduced, and not add any new requirements. Thus, the new view of standards is not intended, as in the past, to arbitrarily impose a costly, unnecessary burden on the AIS proponent and staff, but rather to provide latitude and general guidance in formulating the documentation needs applicable to an AIS project. For the Corps, provisions for tailoring documenation for a specific AIS may be jointly determined between the Functional Proponent, Project Manager, and System Developer following the Milestone 0 Review (before initial developmental products are required).

Documentation - LCMIS

An AIS must be supported by two types of documentation -- *managerial* and *technical*. The managerial portion is the LCMIS documentation. AIS implementation for the Corps of Engineers will require generation of LCMIS documentation as defined in AR 25-3 and ER 25-1-2. Although the specific requirements applicable to each phase are addressed in the relevant chapters in this guide, this appendix provides an overall summary listing, as depicted in Figure 10-1 (extracted from USACE ER 25-1-2).

The indicated reference locations within ER 25-1-2 for each LCMIS document are specifically cited in the second column on the left side of the figure. However, for ease of use, the specific references for each of the LCMIS documents are identified in Table 10-1.

LCMIS Product	Reference
Requirement Statement (RS)	DA Pamphlet 25-2, Information Mission Area Planning Process, Chapter 4.
Mission Need Statement (MNS)	AR 25-3, Army Life Cycle Management of Information Systems, Appendix C.
System Decision Paper (SDP)	AR 25-3, Appendix B.
Abbreviated SDP	ER 25-1-2, Life Cycle Management of Information Systems (USACE), Appendix C.
Financial Analysis	USACE Automated Information Systems (AIS) Economic Analysis Handbook.
Acquisition Strategies	AR 25-3, Chapter 7.

Table 10-1. LCMIS Product References

LCM Phases / Sub-Classes / Program Cost Thresholds ($)

Documentation Required	Reference Location in ER 25-1-2	Mission Need Justification				Concept Exploration & Definition 0				Demonstration and Validation I				Development II				Production & Deployment III				Operations and Support IV			
		Class VI				Class VI				Class VI				Class VI				Class VI				Class VI			
		a	b	c	-	a	b	c	-	a	b	c	-	a	b	c	-	a	b	c	-	a	b	c	-
		1M - 2.5M	350K - 1M	50K - 350K	ALL	1M - 2.5M	350K - 1M	50K - 350K	ALL	1M - 2.5M	350K - 1M	50K - 350K	ALL	1M - 2.5M	350K - 1M	50K - 350K	ALL	1M - 2.5M	350K - 1M	50K - 350K	ALL	1M - 2.5M	350K - 1M	50K - 350K	ALL
Requirement Statement (RS)	Appendix A B.16				△		▲	▲			▲	▲			▲	▲			▲	▲			▲	▲	
Mission Need Statement (MNS)	Appendix A A.9	△				▲				▲				▲				▲				▲			
System Decision Paper (SDP)	Appendix A A.28					△				▲				▲				▲				▲			
Abbreviated SDP	Appendix C Sec. IV-A						△	△			▲	▲			▲	▲			▲	▲			▲	▲	
Financial Analysis	Appendix C Sec. IV-B								△				▲				▲				▲				▲

△ Create ▲ Update

Figure 10-1. LCMIS Documentation for USACE AIS (Class VI)

Generally, most of the *technical* documentation must be directly produced by the System Developer (SD), **while LCMIS products are primarily the responsibility of the Project Manager (PM)/Functional Proponent (FP).**

Documentation - Technical

The second type of documentation associated with an AIS is the technical documentation. The specific documentation requirements established in MIL-STD-498 currently identify a wide range of products, from an Operational Concept Description to a Firmware Support Manual. Each of the 22 separate types of documents incorporated in MIL-STD-498 has a Data Item Description (DID) that defines the structure and content for the product. However, recognizing that the relative complexity of the system may negate the need for the full range of documentation, the standard identifies provisions for tailoring the DIDs. This assessment of specific documentation requirements includes deleting requirements for unneeded information and making other changes that do not increase the required workload, such as combining two documents under one cover. MIL-STD-498 also presents proposed uses of specific standards at different stages of the DoD-defined program strategies, i.e., Grand Design, Incremental and Evolutionary. Table 10-2 provides a summary of each of the document standards, based on the Data Item Descriptions (DIDs) incorporated in MIL-STD-498.

DID Title	Purpose/Description
Computer Operation Manual (COM)	The Computer Operation Manual (COM) provides information needed to operate a given computer and its peripheral equipment. This manual focuses on the computer itself, not on particular software that will run on the computer. The COM is intended for newly developed computers, special-purpose computers, or other computers for which commercial or other operation manuals are not readily available.
Computer Programming Manual (CPM)	The Computer Programming Manual (CPM) provides information needed by a programmer to understand how to program a given computer. This manual focuses on the computer itself, not on particular software that will run on the computer. The CPM is intended for newly developed computers, special-purpose computers, or other computers for which commercial or other programming manuals are not readily available.
Database Design Description (DBDD)	The Database Design Description (DBDD) describes the design of a database, that is, a collection of related data stored in one or more computerized files in a manner that can be accessed by users or computer programs via a database management system (DBMS). It can also describe the software units used to access or manipulate the data. The DBDD is used as the basis for implementing the database and related software units. It provides the acquirer visibility into the design and provides information needed for software support.
Firmware Support Manual (FSM)	The Firmware Support Manual (FSM) provides the information needed to program and reprogram the firmware devices of a system. It applies to read only memories (ROMs), Programmable ROMs (PROMs), Erasable PROMs (EPROMs), and other firmware devices. The FSM describes the firmware devices and the equipment, software, and procedures needed to erase firmware devices, load software into the firmware devices, verify the load process, and mark the loaded firmware devices.

DID Title	Purpose/Description
Interface Design Description (IDD)	The Interface Design Description (IDD) describes the interface characteristics of one or more systems, subsystems, Hardware Configuration Items (HWCIs), Computer Software Configuration Items (CSCIs), manual operations, or other system components. An IDD may describe any number of interfaces. The IDD can be used to supplement the System/Subsystem Design Description (SSDD) (DI-IPSC-81432), Software Design Description (SDD) (DI-IPSC-81435), and Database Design Description (DBDD) (DI-IPSC-81437). The IDD and its comparison Interface Requirements Specification (IRS) (DI-IPSC-81434) serve to communicate and control interface design decisions.
Interface Requirements Specification (IRS)	The Interface Requirements Specification (IRS) specifies the requirements imposed on one or more systems, subsystems, Hardware Configuration Items (HWCIs), Computer Software Configuration Items (CSCIs), manual operations, or other system components to achieve one or more interfaces among these entities. An IRS can cover any number of interfaces. The IRS can be used to supplement the System/Subsystem Specification (SSS) (DI-IPSC-81431) and Software Requirements Specification (SRS) (DI-IPSC-81433) as the basis for design and qualification testing of systems and CSCIs.
Operational Concept Description (OCD)	The Operational Concept Description (OCD) describes a proposed system in terms of the user needs it will fulfill, its relationship to existing systems or procedures, and the ways it will be used. The OCD is used to obtain consensus among the acquirer, developer, support, and user agencies on the operational concept of a proposed system. Depending on its use, an OCD may focus on communicating the user's needs to the developer or the developer's ideas to the user and other interested parties. The term "system" may be interpreted to apply to a portion of a system.

DID Title	Purpose/Description
Software Center Operator Manual (SCOM)	The Software Center Operator Manual (SCOM) provides personnel in a computer center or other centralized or networked software installation information on how to install and operate a software system. The SCOM developed for software systems that will be installed in a computer center or other centralized or networked software installation, with users accessing the system via terminals or personal computers or submitting and receiving inputs and outputs in batch or interactive mode.
Software Design Description (SDD)	The Software Design Description (SDD) describes the design of a Computer Software Configuration Item (CSCI). It describes the CSCI-wide design decisions, the CSCI architectural design, and the detailed design needed to implement the software. The SDD may be supplemented by Interface Design Descriptions (IDDs) (DI-IPSC-81436) and Database Design Descriptions (DBDDs). The SDD, with its associated IDDs and DBDDs, is used as the basis for implementing the software. It provides the acquirer visibility into the design and provides information needed for software support.
Software Development Plan (SDP)	The Software Development Plan (SDP) describes a developer's plans for conducting a software development effort. The term "software development" in this DID is meant to include new development, modification, reuse, reengineering, maintenance, and all other activities resulting in software products. The SDP provides the acquirer insight into, and a tool for monitoring, the processes to be followed for software development, the methods to be used, the approach to be followed for each activity, and project schedules, organization, and resources.

DID Title	Purpose/Description
Software Input/Output Manual (SIOM)	The Software Input/Output Manual (SIOM) tells a user how to access, submit inputs to, and interpret output from, a batch or interactive software system that is run by personnel in a computer center or other centralized or networked software installation. The SIOM is developed for software systems that will be installed in a computer center or other centralized or networked software installation, with users accessing the system via terminals or personal computers or submitting and receiving inputs and outputs in batch mode.
Software Installation Plan (SIP)	The Software Installation Plan (SIP) is a plan for installing software at user sites, including preparations, user training, and conversion from existing systems. The SIP is developed when the developer will be involved in the installation of software at user sites and when the installation process will be sufficiently complex to require a documented plan. For software embedded in a hardware-software system, a fielding or deployment plan for the hardware-software system may make a separate SIP unnecessary.
Software Product Specification (SPS)	The Software Product Specification (SPS) contains or references the executable software, source files, and software support information, including "as built" design information and compilation, build, and modification procedures, for a Computer Software Configuration Item (CSCI). The SPS can be used to order the executable software and/or source files for a CSCI and is the primary software support documentation for the CSCI. Note: Different organizations have different policies for ordering delivery of software. These policies should be determined before applying this DID.

DID Title	Purpose/Description
Software Requirements Specification (SRS)	The Software Requirements Specification (SRS) specifies the requirements for a Computer Software Configuration Item (CSCI) and the methods to be used to ensure that each requirement has been met. Requirements pertaining to the CSCI's external interfaces may be presented in the SRS or in one or more Interface Requirements Specifications (IRSs) (DI-IPSC-81434) referenced from the SRS. The SRS, possibly supplemented by IRSs, is used as the basis for design and qualification testing of a CSCI.
System/Subsystem Design Description (SSDD)	The System/Subsystem Design Description (SSDD) describes the system- or subsystem-wide design and the architectural design of a system or subsystem. The SSDD may be supplemented by Interface Design Descriptions (IDDs) (DI-IPSC-81436) and Database Design Descriptions (DBDDs) (DI-IPSC-81437). The SSDD, with its associated IDDs and DBDDs, is used as the basis for further system development. Throughout this DID, the term "system" may be interpreted to mean "subsystem" as applicable. The resulting document should be titled System Design Description or Subsystem Design Description (SSDD).
System/Subsystem Specification (SSS)	The System/Subsystem Specification (SSS) specifies the requirements for a system or subsystem and the methods to be used to ensure that each requirement has been met. Requirements pertaining to the system or subsystem's external interfaces may be presented in the SSS or in one or more Interface Requirements Specifications (IRSs) (DI-IPSC-81434) referenced from the SSS. The SSS, possibly supplemented by IRSs, is used as the basis for design and qualification testing of a system or subsystem. Throughout this DID, the term "system" may be interpreted to mean "subsystem" as applicable. The resulting document should be titled System Specification or Subsystem Specification (SSS).

DID Title	Purpose/Description
Software Test Description (STD)	The Software Test Description (STD) describes the test preparations, test cases, and test procedures to be used to perform qualification testing of a Computer Software Configuration Item (CSCI) or a software system or subsystem. The STD enables the acquirer to assess the adequacy of the qualification testing to be performed.
Software Test Plan (STP)	The Software Test Plan (STP) describes plans for qualification testing of Computer Software Configuration Items (CSCIs) and software systems. It describes the software test environment to be used for the testing, identifies the tests to be performed, and provides schedules for test activities. There is usually a single STP for a project. The STP enables the acquirer to assess the adequacy of planning for CSCI and, if applicable, software system qualification testing.
Software Test Report (STR)	The Software Test Report (STR) is a record of the qualification testing performed on a Computer Software Configuration Item (CSCI), a software system or subsystem, or other software-related item. The STR enables the acquirer to assess the testing and its results.
Software Transition Plan (STrP)	The Software Transition Plan (STrP) identifies the hardware, software, and other resources needed for life cycle support of deliverable software and describes the developer's plans for transitioning deliverable items to the support agency. The STrP is developed if the software support concept calls for transition of responsibility from the developer to a separate support agency. The STrP may also be used by the acquirer for updating the Computer Resources Life Cycle Management Plan.

DID Title	Purpose/Description
Software User Manual (SUM)	The Software User Manual (SUM) tells a hands-on software user how to install and use a Computer Software Configuration Item (CSCI), a group of related CSCIs, or a software system or subsystem. It may also cover a particular aspect of software operation, such as instructions for a particular position or task. The SUM is developed for software that is run by the user and has a user interface requiring online user input or interpretation of displayed output. If the software is embedded in a hardware-software system, user manuals or operating procedures for that system may make separate SUMs unnecessary.
Software Version Description (SVD)	The Software Version Description (SVD) identifies an describes a software version consisting of one or more Computer Software Configuration Items (CSCIs). It is used to release, track, and control software versions. The term "version" may be applied to the initial release of the software, to a subsequent release of that software, or to one of multiple forms of the software released at approximately the same time (for example, to different sites).

Table 10-2. MIL-STD-498 Documentation Standards

DID - Representative Samples

To illustrate, as an example, the prescribed format and content of these defined documents, this appendix includes copies of two of the new DIDs for documentation that would likely be required for an AIS implementation in the Corps. The first DID is for a **Software User Manual** (see Attachment 1). This DID addresses all of the fundamental requirements one would expect to see in such a product. The second example is a suggested format for a software support planning document. The specific product identified in MIL-STD-498 intended for this purpose is the **Software Transition Plan** (see Attachment 2). This standard could

serve as a model for development of a Post Deployment Software Support (PDSS) Plan. However, as with any of these DIDs, the concept of "tailoring" may be applied to create the end product needed for a specific AIS. One area not addressed by these DIDs, or any other reference included in the new standard, is the topic of *style or tone*. As discussed in Chapter 5 of this guide, the writing style established for any of the technical documentation should exhibit certain characteristics, including readability as well as functionality. The documents should be tailored for the expected audience with the goal of achieving acceptability and ease of use by the recipients. Again, the new standards do not place any real constraints in this area, so the AIS Project Team should use a style that suits the needs of the end users.

Documentation for Software Reuse/COTS

The emerging DoD standards also recognize the potential for incorporating the strategy of software reuse or applying Commercial Off-the-Shelf (COTS) software to a particular AIS implementation. These strategies require a different approach to establishing requirements for documentation. There are a number of key issues in trying to define such requirements, including:

- The limited set of documentation available for most COTS software packages
- The non-availability of source code for COTS products, and

- The question of what to require for software previously developed under other military or Federal agency standards.

In many cases involving software reuse, the end result is "what you see is what you get". Nevertheless, the AIS Project staff must examine the state of documentation for any proposed software reuse strategy to determine its suitability and minimum acceptability. If the software is still being maintained by another organization, then availability of adequate documentation for maintenance is relatively unimportant. However, if the existing User Manuals are outdated or inadequate for the intended audience, then the project group must consider various options, such as creating supplemental documentation for eventual use with the AIS or a realistic reassessment of the potential usage of the candidate software. The guidance provided in Table 10-3, although derived from a previous version of the DoD standard, offers a possible approach for determining how a given documentation requirement (by document type), as currently specified in MIL-STD-498, might be satisfied with reusable software products, including COTS. However, the actual advantages and disadvantages of this approach would depend upon the specific AIS and related system support requirements. The document types listed in this table are more specifically defined in Table 10-2.

If This Doc Would be Req-d For Newly Devel SW	Acceptable Documents {or Portions of Documents} Allowed for Reusable Software					
	Mod or unmod MIL-STD software	Mod/unmod software with MIL-STD/other documentation	Unmodified COTS without available source code	Vendor - mod. COTS without available source code	Unmodified COTS with available source code	Contractor - mod. COTS with available source code
OCD	OCD	OCD/equiv	See Note 6	See Note 6	See Note 6	See Note 6
SCOM	SCOM	SCOM/equiv	Vendor UM	Vendor UM	Vendor UM	SCOM/equiv
CPM	CPM	CPM/equiv	Vendor Manual	Vendor Manual	Vendor Manual	CPM/equiv
COM	Not - applicable describes a computer hardware system, not software					
DBDD	DBDD	DBDD or equiv	Vendor Kit/UM[1]	Vendor Kit/UM[1]	Vendor Kit[1]	DBDD or equiv
FSM	FSM	FSM or equiv	FSM	FSM	FSM	FSM
IDD	IDD	IDD or equiv	Vendor Kit/UM	Vendor Kit/UM	Vendor Kit	IDD or equiv
IRS	IRS	IRS or equiv	See Note 2	See Note 2	See Note 2	See Note 2
SDD	SDD	SDD or equiv	See Note 3	See Note 3	See Note 3	See Note 3
SDP	One project-wide SDP for contractor's plans (not past vendor plans)					
SIOM	SIOM	SIOM or equiv	Vendor UM	Vendor UM	Vendor UM	SIOM or equiv
SIP	One project-wide SIP describing planned installation/training for all software					
SPS	SPS	SPS or equiv	Vendor Kit/UM	Vendor Kit/UM	Vendor Kit & listings	SPS or equiv
SRS	SRS	SRS or equiv	SRS[4]	SRS[4]	SRS[4]	SRS[4]
STrP	STrP	One STrP telling how all deliverable SW is to be supported				
SUM	SUM	SUM or equiv	Vendor UM	Vendor UM	Vendor UM	SUM or equiv
SSDD	One SSDD per system describing system architecture and allocation of system requirements to CIs					
SSS	One SSS per system, specifying the req'ts for all software in the system					
STD	STD	STD or equiv	STD[5]	STD[5]	STD[5]	STD[5]
STP	One STP describing all planned testing to be done					
STR	STR	STR or equiv	STR[5]	STR[5]	STR[5]	STR[5]
SVD	SVD	SVD or equiv	SVD	SVD	SVD	SVD

Equiv = a document containing the same information
Vendor Kit = Vendor SW development kit
Vendor UM = Vendor user/operator manual
Vendor Kit/UM = Vendor Kit if available; otherwise UM

Note 1: Assumes the COTS is a reusable database; it the COTS is a DBMS, prepare a DBDD for the database.
Note 2: IRS or equiv for requirements COTS must meet; Vendor Kit for requirements COTS imposes
Note 3: Behavioral design: vendor UM; SW architecture: SDD showing role of COTS in CSCI architecture (not architecture of COTS); Detailed design: no requirement.
Note 4: Developer (not vendor) SRS identifying requirements the COTS must meet
Note 5: Test documents describing contractor (not vendor) testing of the COTS
Note 6: OCD must be prepared for any unique AIS application.
Note (General): For explanation of terms, see Table 10-2

Table 10-3. Guidance on Documentation for Reusable Software

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ATTACHMENT 1

DATA ITEM DESCRIPTION, DD FORM 1664

SOFTWARE USER MANUAL (SUM)

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DATA ITEM DESCRIPTION

Form Approved
OMB NO. 0704-0188

1. TITLE	2. IDENTIFICATION NUMBER
SOFTWARE USER MANUAL (SUM)	DI-IPSC-81443

3. DESCRIPTION/PURPOSE

3.1 The Software User Manual (SUM) tells a hands-on software user how to install and use a Computer Software Configuration Item (CSCI), a group of related CSCIs, or a software system or subsystem. It may also cover a particular aspect of software operation, such as instructions for a particular position or task.

3.2 A SUM is developed for software that is run by the user and has a user interface requiring on-line user input or interpretation of displayed output. If the software is embedded in a hardware-software system, user manuals or operating procedures for that system may make separate SUMs unnecessary.

4. APPROVAL DATE (YYMMDD)	5. OFFICE OF PRIMARY RESPONSIBILITY	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
941205	EC		

7. APPLICATION/INTERRELATIONSHIP

7.1 This Data Item Description (DID) contains the format and content preparation instructions for data product generated by specific and discrete task requirements as delineated in the contract.

7.2 This DID is used when the developer is tasked to identify and record information needed by hands-on users of software.

7.3 The SUM is an alternative to the Software Input/Output Manual (SIOM) (DI-IPSC-81445) and Software Center Operator Manual (SCOM) (DI-IPSC-81444).

7.4 The Contract Data Requirements List (CDRL) (DD 1423) should specify whether deliverable data are to be delivered on paper or electronic media; are to be in a given electronic form (such as ASCII, CALS, or compatible with a specified word processor or other support software); may be delivered in developer format rather than in the format specified herein; and may reside in a computer-aided software engineering (CASE) or other automated tool rather than in the form of a traditional document.

7.5 This DID supersedes DI-MCCR-80019A, DI-IPSC-80694, DI-MCCR-80313, DI-MCCR-80314, and DI-MCCR-80315.

8. APPROVAL LIMITATION	9a. APPLICABLE FORMS	9b. AMSC NUMBER
Limited Approval from 12/5/94 through 12/5/96		N7086

10. PREPARATION INSTRUCTIONS

10.1 General instructions.

a. Automated techniques. Use of automated techniques is encouraged. The term "document" in this DID means a colection of data regardless of its medium.

b. Alternate presentation styles. Diagrams, tables, matrices, and other presentation styles are acceptable substitutes for text when data required by this DID can be made more readable using these styles.

(Continued on Page 2)

11. DISTRIBUTION STATEMENT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

10. PREPARATION INSTRUCTIONS -- 10.1 General Instructions (continued)

c. Title page or identifier. The document shall include a title page containing, as applicable: document number; volume number; version/revision indicator; security markings or other restrictions on the handling of the document; date; document title; name, abbreviation, and any other identifier for the system, subsystem, or item to which the document applies; contract number; CDRL item number; organization for which the document has been prepared; and name and address of the preparing organization; and distribution statement. For data in a database or other alternative form, this information shall be included on external and internal labels or by equivalent identification methods.

d. Table of contents and index. The document shall contain a table of contents providing the number, title, and page number of each titled paragraph, figure, table, and appendix, and an index providing an alphabetic listing of key terms and concepts covered in the document and the pages or paragraphs in which the terms or concepts are covered. For data in a database or other alternative form, this information shall consist of an internal or external table of contents containing pointers to, or instructions for accessing, each paragraph, figure, table, and appendix or their equivalents.

e. Page numbering/labeling. Each page shall contain, a unique page number and display the document number, including version, volume, and date, as applicable. For data in a database or other alternative form, files, screens, or other entities shall be assigned names or numbers in such a way that desired data can be indexed and accessed.

f. Response to tailoring instructions. If a paragraph is tailored out of this DID, the resulting document shall contain the corresponding paragraph number and title, followed by "This paragraph has been tailored out." For data in a database or other alternative form, this representation need occur only in the table of contents or equivalent.

g. Multiple paragraphs and subparagraphs. Any section, paragraph, or subparagraph in this DID may be written as multiple paragraphs or subparagraphs to enhance readability.

h. Standard data descriptions. If a data description required by this DID has been published in a standard data element dictionary specified in the contract, reference to an entry in that dictionary is preferred over including the description itself.

i. Substitution of existing documents. Commercial or other existing documents may be substituted for all or part of the document if they contain the required data.

10.2 Content requirements. Content requirements begin on the following page. The numbers shown designate the paragraph numbers to be used in the document. Each such number is understood to have the prefix "10. 2" within this DID. For example, the paragraph numbered 1.1 is understood to be paragraph 10.2.1.1 within this DID.

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

1. Scope. This section shall be divided into the following paragraphs.

1.1 Identification. This paragraph shall contain a full identification of the system and the software to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).

1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. it shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, acquirer, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.

1.3 Document overview. This paragraph shall summarize the purpose and contents of this manual and shall describe any security or privacy considerations associated with its use.

2. Referenced documents. This section shall list the number, title, revision, and date of all documents referenced in this manual. This section shall also identify the source for all documents not available through normal Government stocking activities.

3. Software summary. This section shall be divided into the following paragraphs.

3.1 Software application. This paragraph shall provide a brief description of the intended uses of the software. Capabilities, operating improvements, and benefits expected from its use shall be described.

3.2 Software inventory. This paragraph shall identify all software files, including databases and data files, that must be installed for the software to operate. The identification shall include security and privacy considerations for each file and identification of the software necessary to continue or resume operation in case of an emergency.

3.3 Software environment. This paragraph shall identify the hardware, software, manual operations, and other resources needed for a user to install and run the software. Included, as applicable, shall be identification of:

a. Computer equipment that must be present, including amount of memory needed, amount of auxiliary storage needed, and peripheral equipment such as printers and other input/output devices

b. Communications equipment that must be present

c. Other software that must be present, such as operating systems, databases, data files, utilities, and other supporting systems

d. Forms, procedures, or other manual operations that must be present

e. Other facilities, equipment, or resources that must be present

3.4 Software organization and overview of operation. This paragraph shall provide a brief description of the organization and operation of the software from the user's point of view. The description shall include, as applicable:

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

a. Logical components of the software, from the user's point of view, and an overview of the purpose/ operation of each component.

b. Performance.characteristics that can be expected by the user, such as:

1) Types, volumes, rate of inputs accepted

2) Types, volume, accuracy, rate of outputs that the software can produce

3) Typical response time and factors that affect it

4) Typical processing time and factors that affect it

5) Limitations, such as number of events that can be tracked

6) Error rate that can be expected

7) Reliability that can be expected

c. Relationship of the functions performed by the software with interfacing systems, organizations, or positions

d. Supervisory controls that can be implemented (such as passwords) to manage the software

3.5 Contingencies and alternate states and modes of operation. This paragraph shall explain differences in what the user will be able to do with the software at times of emergency and in various states and modes of operation, if applicable.

3.6 Security and privacy. This paragraph shall contain an overview of the security and privacy considerations associated with the software. A warning shall be included regarding making unauthorized copies of software or documents, if applicable.

3.7 Assistance and problem reporting. This paragraph shall identify points of contact and procedures to be followed to obtain assistance and report problems encountered in using the software.

4. Access to the software. This section shall contain step-by-step procedures oriented to the first time/occasional user. Enough detail shall be presented so that the user can reliably access the software before learning the details of its functional capabilities. Safety precautions marked by WARNING or CAUTION shall be included where applicable.

4.1 First-time user of the software. This paragraph shall be divided into the following subparagraphs.

4.1.1 Equipment familiarization. This paragraph shall describe the following as appropriate:

a. Procedures for turning on power and making adjustments

b. Dimensions and capabilities of the visual display screen

c. Appearance of the cursor, how to identify an active cursor if more than one cursor can appear, how to position a cursor, and how to use a cursor

d. Keyboard layout and role of different types of keys and pointing devices

e. Procedures for turning power off if special sequencing of operations is needed

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

4.1.2 Access control. This paragraph shall present an overview of the access and security features of the software that are visible to the user. The following items shall be included, as applicable:

a. How and from whom to obtain a password

b. How to add, delete, or change passwords under user control

c. Security and privacy considerations pertaining to the storage and marking of output reports and other media that the user will generate

4.1.3 Installation and setup. This paragraph shall describe any procedures that the user must perform to be identified or authorized to access or install software on the equipment, to perform the installation, to configure the software, to delete or overwrite former files or data, and to enter parameters for software operation.

4.2 Initiating a session. This paragraph shall provide step-by-step procedures for beginning work, including any options available. A checklist for problem determination shall be included in case difficulties are encountered.

4.3 Stopping and suspending work. This paragraph shall describe how the user can cease or interrupt use of the software and how to determine whether normal termination or cessation has occurred.

5. Processing reference guide. This section shall provide the user with procedures for using the software. If procedures are complicated or extensive, additional Sections 6, 7, ... may be added in the same paragraph structure as this section and with titles meaningful to the sections selected. The organization of the document will depend on the characteristics of the software being documented. For example, one approach is to base the sections on the organizations in which users work, their assigned positions, their work sites, or the tasks they must perform. For other software, it may be more appropriate to have Section 5 be a guide to menus, Section 6 be a guide to the command language used, and Section 7 be a guide to functions. Detailed procedures are intended to be presented in subparagraphs of paragraph 5.3. Depending on the design of the software, the subparagraphs might be organized on a function-by-function, menu-by-menu, transaction-by-transaction, or other basis. Safety precautions, marked by WARNING or CAUTION shall be included where applicable.

5.1 Capabilities. This paragraph shall briefly describe the interrelationships of the transactions, menus, functions, or other processes in order to provide an overview of the use of the software.

5.2 Conventions. This paragraph shall describe any conventions used by the software, such as the use of colors in displays, the use of audible alarms, the use of abbreviated vocabulary, and the use of rules for assigning names or codes.

5.3 Processing procedures. This paragraph shall explain the organization of subsequent paragraphs, e.g., by function, by menu, by screen. Any necessary order in which procedures must be accomplished shall be described.

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

5.3.x (Aspect of software use). The title of this paragraph shall identify the function, menu, transaction, or other process being described. This paragraph shall describe and give options and examples, as applicable, of menus, graphical icons, data entry forms, user inputs, inputs from other software or hardware that may affect the software's interface with the user, outputs, diagnostic or error messages or alarms, and help facilities that can provide online descriptive or tutorial information. The format for presenting this information can be adapted to the particular characteristics of the software, but a consistent style of presentation shall be used, i.e., the descriptions of menus shall be consistent, the descriptions of transactions shall be consistent among themselves.

5.4 Related processing. This paragraph shall identify and describe any related batch, offline, or background processing performed by the software that is not invoked directly by the user and is not described in paragraph 5.3. Any user responsibilities to support this processing shall be specified.

5.5 Data backup. This paragraph shall describe procedures for creating and retaining backup data that can be used to replace primary copies of data' in event of errors, defects, malfunctions, or accidents.

5.6 Recovery from errors, malfunctions, and emergencies. This paragraph shall present detailed procedures for restart or recovery from errors or malfunctions occurring during processing and for ensuring continuity of operations in the event of emergencies.

5.7 Messages. This paragraph shall list, or refer to an appendix that lists, all error messages, diagnostic messages, and information messages that can occur while accomplishing any of the user's functions. The meaning of each message and the action that should be taken after each such message shall be identified and described.

5.8 Quick-reference guide. If appropriate to the software, this paragraph shall provide or reference a quick-reference card or page for using the software. This quick-reference guide shall summarize, as applicable, frequently-used function keys, control sequences, formats, commands, or other aspects of software use.

6. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, rationale). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of terms and definitions needed to understand this document. If section 5 has been expanded into section(s) 6, ..., this section shall be numbered as the next section following section n.

A. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided. Appendixes may be bound as separate documents for ease in handling. Appendixes shall be lettered alphabetically (A, B, etc.).

ATTACHMENT 2

DATA ITEM DESCRIPTION, DD FORM 1664

SOFTWARE TRANSITION PLAN (STrP)

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DATA ITEM DESCRIPTION

Form Approved
OMB NO. 0704-0188

1. TITLE	2. IDENTIFICATION NUMBER
SOFTWARE TRANSITION PLAN (STrP)	**DI-IPSC-81429**

3. DESCRIPTION/PURPOSE

3.1 The Software Transition Plan (STrP) identifies the hardware, software, and other resources needed for life cycle support of deliverable software and describes the developer's plans for transitioning deliverable items to the support agency.

3.2 The STrP is developed if the software support concept calls for transition of responsibility from the developer to a separate support agency. The STrP may also be used by the acquirer for updating the Computer Resources Life Cycle Management Plan.

4. APPROVAL DATE (YYMMDD)	5. OFFICE OF PRIMARY RESPONSIBILITY	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
941205	EC		

7. APPLICATION/INTERRELATIONSHIP

7.1 This Data Item Description (DID) contains the format and content preparation instructions for data product generated by specific and discrete task requirements as delineated in the contract.

7.2 This DID is used when the developer is tasked to develop and record plans for transitioning deliverable items to the support agency.

7.3 The Contract Data Requirements List (CDRL) (DD1423) should specify whether deliverable data are to be delivered on paper or electronic media; are to be in a given electronic form (such as ASCII, CALS, or compatible with a specified word processor or other support software); may be delivered in developer format rather than in the format specified herein; and may reside in a computer-aided software engineering (CASE) or other automated tool rather than in the form of a traditional document.

7.4 This DID supersedes DI-MCCR-80024A.

8. APPROVAL LIMITATION	9a. APPLICABLE FORMS	9b. AMSC NUMBER
Limited Approval from 12/5/94 through 12/5/96		N7072

10. PREPARATION INSTRUCTIONS

10.1 General instructions.

a. Automated techniques. Use of automated techniques is encouraged. The term "document" in this DID means a collection of data regardless of its medium.

b. Alternate presentation styles. Diagrams, tables, matrices, and other presentation styles are acceptable substitutes for text when data required by this DID can be made more readable using these styles.

(Continued on Page 2)

11. DISTRIBUTION STATEMENT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

10. PREPARATION INSTRUCTIONS -- 10.1 General Instructions (continued)

c. Title page or identifier. The document shall include a title page containing, as applicable: document number; volume number; version/revision indicator; security markings or other restrictions on the handling of the document; date; document title; name, abbreviation, and any other identifier for the system, subsystem, or item to which the document applies; contract number; CDRL item number; organization for which the document has been prepared; and name and address of the preparing organization; and distribution statement. For data in a database or other alternative form, this information shall be included on external and internal labels or by equivalent identification methods.

d. Table of contents. The document shall contain a table of contents providing the number, title, and page number of each titled paragraph, figure, table, and appendix. For data in a database or other alternative form, this information shall consist of an internal or external table of contents containing pointers to, or instructions for accessing, each paragraph, figure, table, and appendix or their equivalents.

e. Page numbering/labeling. Each page shall contain a unique page number and display the document number, including version, volume, and date, as applicable. For data in a database or other alternative form, files, screens, or other entities shall be assigned names or numbers in such a way that desired data can be indexed and accessed.

f. Response to tailoring instructions. If a paragraph is tailored out of this DID, the resulting document shall contain the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out." For data in a database or other alternative form, this representation need occur only in the table of contents or equivalent.

g. Multiple paragraphs and subparagraphs. Any section, paragraph, or subparagraph in this DID may be written as multiple paragraphs or subparagraphs to enhance readability.

h. Standard data descriptions. If a data description required by this DID has been published in a standard data element dictionary specified in the contract, reference to an entry in that dictionary is preferred over including the description itself.

i. Substitution of existing documents. Commercial or other existing documents may be substituted for all or part of the document if they contain the required data.

10.2 Content requirements. Content requirements begin on the following page. The numbers shown designate the paragraph numbers to be used in the document. Each such number is understood to have the prefix "10.2" within this DID. For example, the paragraph numbered 1.1 is understood to be paragraph 10.2.1.1 within this DID.

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

1. Scope. This section shall be divided into the following paragraphs.

1.1 Identification. This paragraph shall contain a full identification of the system and the software to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).

1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, acquirer, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.

1.3 Document overview. This paragraph shall summarize the purpose and contents of this document and shall describe any security or privacy considerations associated with its use.

1.4 Relationship to other plans. This paragraph shall describe the relationship, if any, of the STrP to other project management plans.

2. Referenced documents. This section shall list the number, title, revision, and date of all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.

3. Software support resources. This section shall be divided into paragraphs to identify and describe the resources needed to support the deliverable software. These resources shall include items needed to control, copy, and distribute the software and its documentation, and to specify, design, implement, document, test, evaluate, control, copy, and distribute modifications to the software.

3.1 Facilities. This paragraph shall describe the facilities needed to support the deliverable software. These facilities may include special buildings, rooms, mock-ups, building features such as raised flooring or cabling; building features to support security and privacy requirements (TEMPEST shielding, vaults, etc.), building features to support safety requirements (smoke alarms, safety glass, etc.), special power requirements, and so on. The purpose of each item shall be described. Diagrams may be included as applicable.

3.2 Hardware. This paragraph shall identify and describe the hardware and associated documentation needed to support the deliverable software. This hardware may include computers, peripheral equipment, hardware simulators, stimulators, emulators, diagnostic equipment, and non-computer equipment. The description shall include:

a. Specific models, versions, and configurations

b. Rationale for the selected hardware

c. Reference to user/operator manuals or instructions for each item, as applicable

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

d. Identification of each hardware item and document as acquirer-furnished, an item that will be delivered to the support agency, an item the support agency is known to have, an item the support agency must acquire, or other description of status

e. If items must be acquired, information about a current source of supply, including whether the item is currently available and whether it is expected to be available at the time of delivery

f. Information about manufacturer support, licensing, and data rights, including whether the item is currently supported by the manufacturer, whether it is expected to be supported at the time of delivery, whether licenses will be assigned to the support agency, and the terms of such licenses.

g. Security and privacy considerations, limitations, or other items of interest

3.3 Software. This paragraph shall identify and describe the software and associated documentation needed to support the deliverable software. This software may include computer-aided software engineering (CASE) tools, data in these tools, compilers, test tools, test data, simulations, emulations, utilities, configuration management tools, databases and data files, and other software. The description shall include:

a. Specific names, identification numbers, version numbers, release numbers, and configurations, as applicable

b. Rationale for the selected software

c. Reference to user/operator manuals or instructions for each item, as applicable

d. Identification of each software item and document as acquirer-furnished, an item that will be delivered to the support agency, an item the support agency is known to have, an item the support agency must acquire, or other description of status

e. If items must be acquired, information about a current source of supply, including whether the item is currently available and whether it is expected to be available at the time of delivery.

f. Information about manufacturer support, licensing, and data rights, including whether the item is currently supported by the manufacturer, whether it is expected to be supported at the time of delivery, whether licenses will be assigned to the support agency, and the terms of such licenses.

g. Security and privacy considerations, limitations, or other items of interest

3.4 Other documentation. This paragraph shall identify any- other documentation needed to support the deliverable software. The list will include, for example, plans, reports, studies, specifications, design descriptions, test cases/procedures, test reports, user/operator manuals, and support manuals for the deliverable software. This paragraph shall provide:

a. Names, identification numbers, version numbers, and release numbers, as applicable

b. Rationale for including each document in the list

c. Identification of each document as acquirer-furnished, an item that will be delivered to the support agency, an item the support agency is known to have, an item the support agency must acquire, or other description of status

d. If a document must be acquired, information about where to acquire it

e. Information about licensing and data rights

f. Security and privacy considerations, limitations, or other items of interest

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

3.5 Personnel. This paragraph shall describe the personnel needed to support the deliverable software, including anticipated number of personnel, types and levels of skills and expertise, and security clearances. This paragraph shall cite, as applicable, actual staffing on the development project as a basis for the staffing needs cited.

3.6 Other resources. This paragraph shall identify any other resources needed to support the deliverable software. Included may be consumables such as magnetic tapes and diskettes, together with an estimate of the type and number that should be acquired.

3.7 Interrelationship of components. This paragraph shall identify the interrelationships of the components identified in the preceding paragraphs. A figure may be used to show the interrelationships.

4. Recommended Procedures. This section shall be divided into paragraphs as needed to describe any procedures, including advice and lessons learned, that the developer may wish to recommend to the support agency for supporting the deliverable software and associated support environment.

5. Training. This section shall be divided into paragraphs as appropriate to describe the developer's plans for training support personnel to support of the deliverable software. This section shall include:

a. The schedule, duration, and location for the training

b. The delineation between classroom training and "hands-on" training

c. Provision (either directly or by reference) for:

1) Familiarization with the operational software and target computer(s)

2) Familiarization with the support software and host system

6. Anticipated areas of change. This section shall describe anticipated areas of change to the deliverable software.

7. Transition planning. This section shall be divided into paragraphs as needed to describe the developer's plans for transitioning the deliverable software to the support agency. This section shall address the following:

a. All activities to be performed to transition the deliverable software to the support agency. These activities may include planning/coordination meetings; preparation of items to be delivered to the support agency; packaging, shipment, installation, and checkout of the software support environment; packaging, shipment, installation, and checkout of the operational software; and training of support personnel.

b. Roles and responsibilities for each activity

c. The resources needed to carry out the transition activities and the source from which each resource will be provided

10. PREPARATION INSTRUCTIONS -- 10.2 Content Requirements (continued)

d. Schedules and milestones for conducting the transition activities. These schedules and milestones shall be compatible with the contract master schedule.

e. Procedures for installation and checkout of deliverable items in the support environment

8. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, rationale). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

A. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided. Appendixes may be bound as separate documents for ease in handling. Appendixes shall be lettered alphabetically (A, B, etc.).

Appendix 10 - Topic Index

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